

# Costs of Institutional Controls

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# Introduction

- Definition:
  - ICs are defined as any mechanism(s) used to restrict inappropriate uses of land, facilities, and environmental media by limiting exposure to residual contamination
  - Per DOE Policy and Guidance, ICs are defined as administrative and legal controls, physical barriers and markers, and informational sources to inform current and future generations of hazards that exist



# Hope to accomplish

- Give a classification for costs, and some measures of what they have been
- Give some specific examples of costs for ICs at LM sites
- Will not be statistically valid, but hope to be predictive



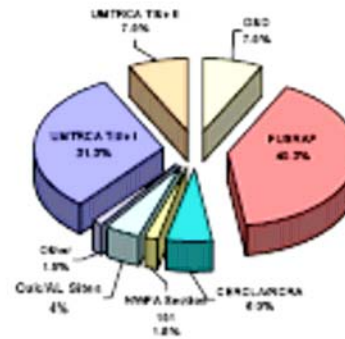
# Overview

- ICs to be protective of human health and the environment
- For disposal sites, keep site safe.
- Maintain the remedy
- Prevent inappropriate use and eliminate exposure

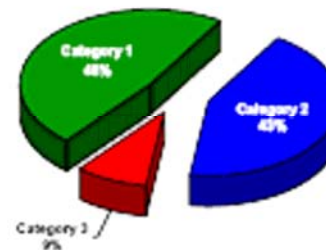


# Types of sites

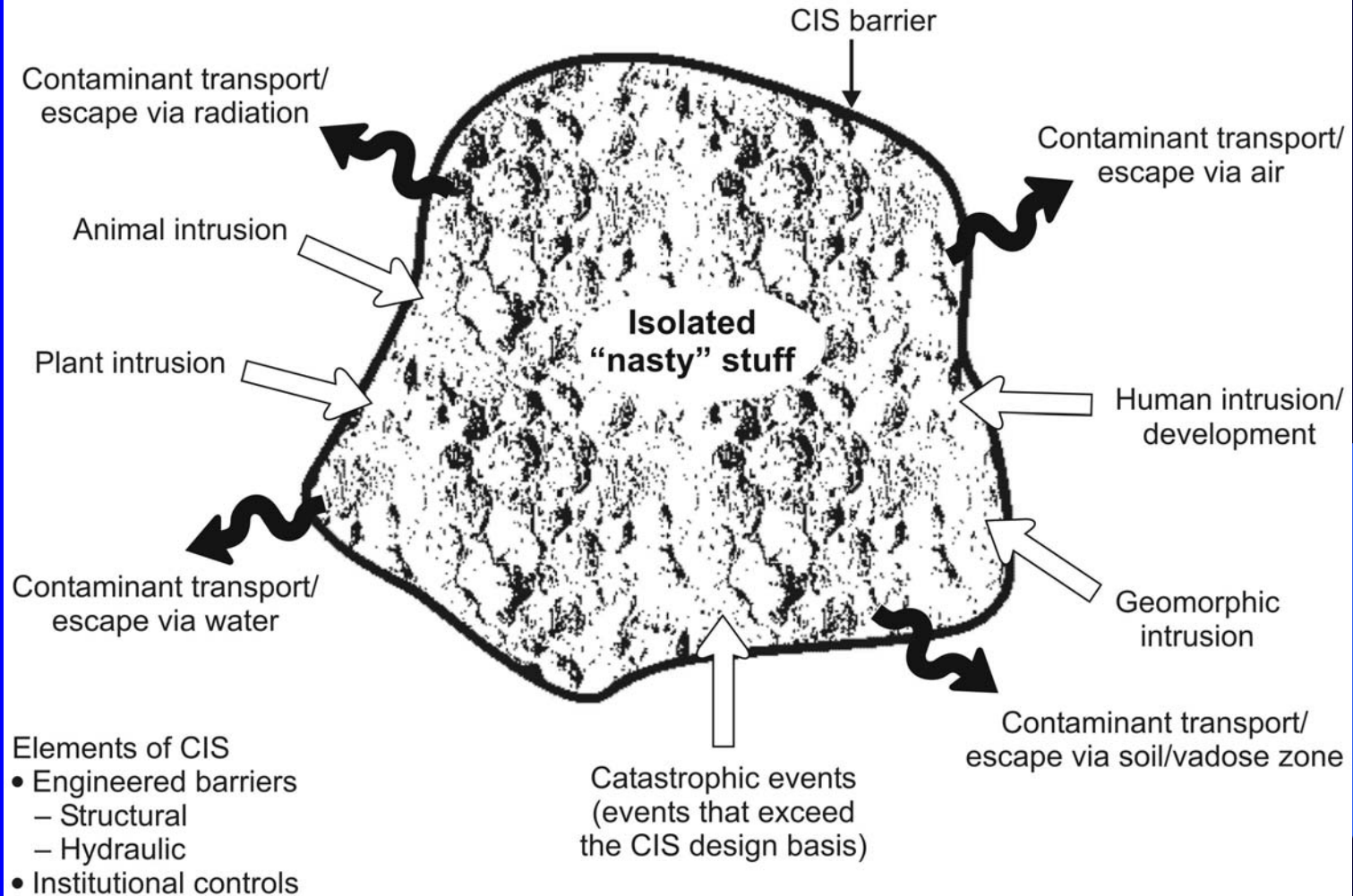
Type	Actual 2005
UMTRCA Title I	21
UMTRCA Title II	5
D&D	5
FUSRAP	27
CERCLA/RCRA	4
NWPA Section 151	1
OakRidge Sites	3
Other	1
<b>Total</b>	<b>67</b>



FY05 Sites by Category	
Category 1	32
Category 2	29
Category 3	6
<b>Total</b>	<b>67</b>



# Generic Contaminant Isolation System (CIS)



# Classification of costs

- Setup
- Maintenance and Enforcement
- Reporting
- Cost of Failure



# Setup Costs

- Can be almost anything
  - Have to determine what needs to be restricted and what mechanism will accomplish needed restrictions.
    - Easements/access can range from \$50/ year to \$250K one time cost
    - Purchase property at going rate and can be \$200/acre to \$20,000/acre or more
  - Zone changes often done by locals at no cost to DOE





# Maintenance/Enforcement Costs

- Repair and replacement of engineered ICs and signs
- Could be continued costs for easements
- Cost of periodic inspections not driven by size of site, but by having at least two inspectors for H&S concerns
  - especially for remote sites
- Cost of dealing with those (human or animal) who violate restrictions





# Replacing fence material



# Markers



# Reporting Costs

- Can be lots or little
- Not correlated to volume of info or to “to who”
- Web costs are less than paper requests for anything greater than 2 requests
- Most reporting costs are amortized over public information/outreach as well  
(Report to regulator is the report to public)





# Cost of Failure

- Failure  $\neq$  Harm
- Cost occurs mostly by losing trust
- What does lost trust cost remediation and DOE?



# REUSE

**The Mound Advanced Technology Center (MATC) is a business and scientific technology park at the Mound Site.**



# Costs - Set up

- Depends if DOE owns property or not
- Depends on where the property is
- \$200- \$42,000 for rights or access per site
- DOE is moving to perpetual easements
- Costs could be high to replace a restricted resource, such as ground water





# Costs - Maintenance/Enforcement

- \$200 to \$100,000 for inspections, monitoring
- Eyeball checks to courthouse visits and electronic database reviews
- For “pure” IC- probably never more than \$10,000
- No history of enforcement costs except as relates to maintaining engineered ICs



# Reporting

- Reporting includes all information dissemination
- Web publishing – least expensive and most accessible form of communication
- Pure reporting on ICs is \$2000 to \$18,000



# Urban Site ICs



# Example costs for urban site

• Setup	\$	60,000
• Maintenance/enf	\$	23,400
• Reporting	\$	20,300



# Another Example

• Setup	\$ 13,000
• Capital Cost	\$1,000,000
• Maintenance/Monitoring	\$ 8,000
• Reporting	\$ 2,000
• Enforcement	\$ ?



# Summary

- LM has wide range of sites, site locations, and restrictions required
- Size, location and legal drivers seem to help little to predict costs
- Allowing as many beneficial land uses as possible increases the number of ICs and the costs
- Inspections, reviewing permit applications is equal in cost to reporting



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